

In the claims:

Following is a complete set of claims as amended with this Response.

1. (Currently Amended) An apparatus comprising:

a first tuner to ~~provide~~ ~~receive~~ modulated video signals, the first tuner having an external control interface to receive commands in a first protocol specific to the first tuner at the external control interface; ~~and~~

a second tuner to provide modulated video signals, the second tuner having an external control interface to receive commands in a second protocol different from the first protocol and specific to the second tuner at the second tuner external control interface;

a graphics controller to generate commands for controlling the first and second tuners, the commands being generated in a ~~third~~ ~~second~~ generalized protocol different from the first and second protocols;

a microcontroller coupled to the graphics controller and to the external interfaces of the first and second tuners ~~tuner~~ to receive the commands from the graphics controller in the ~~third~~ ~~second~~ protocol, to identify a tuner to which each command is directed, to convert the commands from the ~~third~~ ~~second~~ protocol to the first protocol for the identified tuner, and to transmit the converted commands to the respective identified tuner through the external control interface of the respective tuner.

2. (Currently Amended) The apparatus of Claim 1, wherein the tuner further generates command responses in the first protocol and wherein the microcontroller receives the command responses, converts them to the third ~~second~~ protocol and transmits the converted command responses to the graphics controller.

3. (Currently Amended) The apparatus of Claim 1, further comprising a third ~~second~~ tuner to receive a modulated video signal, the third ~~second~~ tuner having an external interface to receive commands in a fourth ~~third~~ protocol specific to the third ~~second~~ tuner, and wherein the microcontroller receives external commands from the graphics controller for the third ~~second~~ tuner in the fourth ~~second~~ protocol, converts them to the fourth ~~third~~ protocol, and transmits them to the third ~~second~~ tuner.

4. (Currently Amended) The apparatus of Claim 1, wherein the tuner further comprises an input/output interface to communicate data and control signals in the first protocol to external devices and wherein the microcontroller is coupled to the input/output interface to convert data and control signals between the first protocol and the third ~~second~~ protocol.

5. (Previously Presented) The apparatus of Claim 1, wherein the graphics controller comprises a system processor coupled to the microcontroller to generate the commands in the first protocol to control the tuner and to control other functions of the apparatus.

6. (Currently Amended) The apparatus of Claim 1, further comprising a look-up table for the tuner and wherein the microcontroller converts the external tuner commands by applying the commands in the third ~~second~~ protocol to the look-up table.

7. (Original) The apparatus of Claim 1, further comprising an instruction stack specific for the tuner and wherein the microcontroller converts the external tuner commands by applying instructions from the tuner-specific instruction stack.

8. (Currently Amended) A method comprising:
generating commands in a ~~third second-generalized~~ protocol at a graphics controller to control ~~one of a first tuner and a second~~ tuner;
receiving the generated commands at a microcontroller from the graphics controller;
identifying a tuner to which the commands are directed;
determining a command protocol for the identified tuner as one of a first protocol and a second protocol, the first protocol corresponding to the first tuner and the second protocol corresponding to the second tuner;
converting the received commands from the ~~third second~~ protocol to the identified protocol ~~a first protocol, the first protocol being specific to the tuner;~~ and
transmitting the commands to the identified tuner through an external control interface of the tuner in the identified first or second first protocol.

9. (Currently Amended) The method of Claim 8, further comprising:
receiving command responses in the first protocol at the microcontroller from the first tuner;

converting the received command response to the ~~third second~~ protocol; and
transmitting the converted command responses to the graphics controller.

10. (Currently Amended) The method of Claim 8, further comprising:
receiving at the microcontroller from the graphics controller commands in the ~~third second~~ protocol for the a second tuner;
converting the second tuner external commands to the second ~~a third~~ protocol, ~~the third protocol being specific to the second tuner;~~ and

transmitting the ~~second~~ third protocol commands to the second tuner.

11. (Original) The method of Claim 8, wherein converting the external tuner commands comprises applying the commands in the second protocol to a look-up table.

12. (Original) The method of Claim 8, wherein converting the external tuner commands comprises applying instructions from a tuner-specific instruction stack.

13. (Currently Amended) An article comprising a machine-readable medium having stored thereon data representing instructions which, when executed by a machine, cause the machine to perform operations comprising:

generating commands in a ~~third second-generalized~~ protocol at a graphics controller to control one of a first tuner and a second tuner;

receiving the generated commands at a microcontroller from the graphics controller;

identifying a tuner to which the commands are directed;

determining a command protocol for the identified tuner as one of a first protocol and a second protocol, the first protocol corresponding to the first tuner and the second protocol corresponding to the second tuner;

converting the received commands from the ~~third second~~ protocol to the identified protocol a first-protocol, the first-protocol-being specific-to-the-tuner; and

transmitting the commands to the identified tuner through an external control interface of the tuner in the identified first or second first protocol.

14. (Currently Amended) The medium of Claim 13, further comprising instructions which, when executed by the machine, cause the machine to perform further operations comprising:

receiving command responses in the first protocol at the microcontroller from the first tuner;

converting the received command response to the third ~~second~~ protocol; and
transmitting the converted command responses to the graphics controller.

15. (Currently Amended) The medium of Claim 13, further comprising instructions which, when executed by the machine, cause the machine to perform further operations comprising:

receiving at the microcontroller from the graphics controller commands in the third ~~second~~ protocol for the a second tuner;

converting the second tuner external commands to the second ~~a third~~ protocol, ~~the third protocol being specific to the second tuner;~~ and

transmitting the second ~~third~~ protocol commands to the second tuner.

16. (Original) The medium of Claim 13, wherein the instructions for converting the external tuner commands comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising applying the commands in the second protocol to a look-up table.

17. (Original) The method of Claim 13, wherein the instructions for converting the external tuner commands comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising applying instructions from a tuner-specific instruction stack.

18. (Currently Amended) A video tuner comprising:

a system processor to receive user commands and to generate commands in a ~~third second generalized~~ protocol based on the received user commands to control at least one of a first and a second tuner;

a first tuner to receive wireless video signals modulated over a carrier frequency, the tuner having an external control interface to receive commands in a first protocol specific to the tuner from the system processor;

a second tuner to receive wireless video signals modulated over a carrier frequency, the second tuner having an external control interface to receive commands in a second protocol specific to the tuner from the system processor; and

a microcontroller coupled between the system processor and to the external control interfaces of the first and second tuners ~~tuner~~ to receive tuner commands from the system processor in the ~~third second~~ protocol, to identify a tuner to which each command is directed, to convert the received tuner commands ~~them~~ from the third second generalized protocol to the first specific protocol for the identified tuner, and to transmit the converted commands ~~them~~ to the respective identified tuner through the external control interface of the respective tuner.

19. (Currently Amended) The tuner of Claim 18, wherein the tuner further generates command responses in the first protocol and wherein the microcontroller receives the command responses, converts them to the third second protocol and transmits the converted command responses to the system processor.

20. (Currently Amended) The tuner of Claim 18, further comprising a third ~~second~~ tuner to receive modulated video signals, the third ~~second~~ tuner having an external interface to receive commands in a fourth ~~third~~ protocol specific to the third ~~second~~ tuner, and wherein the microcontroller receives third ~~second~~ tuner commands from the system processor for the third ~~second~~ tuner in the third ~~second~~ protocol, converts them to the fourth ~~third~~ protocol, and transmits them to the third ~~second~~ tuner.

21. (Currently Amended) The tuner of Claim 18, wherein the tuner further comprises an input/output interface to communicate data and control signals in the first protocol to external devices and wherein the microcontroller is coupled to the input/output interface to convert data and control signals between the first protocol and the third ~~second~~ protocol.

22. (Currently Amended) The tuner of Claim 18, further comprising a look-up table for the tuner and wherein the microcontroller converts the tuner commands from the system processor by applying the commands in the third ~~second~~ protocol to the look-up table.

23. (Previously Presented) The tuner of Claim 18, further comprising an instruction stack specific for the tuner and wherein the microcontroller converts the tuner commands from the system processor by applying instructions from the tuner-specific instruction stack.